kinematograph may be made such an effective educational instrument that encouragement should be given to all who are endeavouring to discover its best uses and to produce pictures above the penny-dreadful type which is now too common.

SOCIETIES AND ACADEMIES.

LONDON.

Royal Society, March 6.—Sir Alfred Kempe, vice-president and treasurer, in the chair.—Prof. J. C. **Bose**: An automatic method for the investigation of the velocity of transmission of excitation in Mimosa. The research was undertaken to decide the question whether in *Mimosa pudica* stimulus gives rise to a mere passage of hydro-mechanical disturbance or a transmission of true excitation. The results obtained warrant the conclusion that there is transmission of true excitation.—W. K. **Spencer**: The Evolution of the Cretaceous Asteroidea. An endeavour is made to trace the evolution of the starfish through the whole of the Cretaceous deposits. At the first sight the material appeared to be unpromising, for complete or even fragmentary specimens are rare. It has been found possible, however, to use the isolated marginal plates which are found fairly commonly on weathered chalk surfaces. It is shown that these marginal plates have a shape and ornament characteristic of each distinct species. The species may be arranged in lineages, and the examination of large collections made by English and Continental workers make it feasible to trace the life-history of most of the lineages.—Dr. E. A. Newell **Arber**: A preliminary note on the fossil plants of the Mount Potts Beds, New Zealand, collected by Mr. D. G. Lillie, biologist to Capt. Scott's Antarctic Expedition in the *Terra Nova,* in 1911. The communication briefly discusses the first results, which have reached this country, of the late Capt. Scott's second Antarctic Expedition. In the winter months of the last two years the *Terra Nova* has been at work in New Zealand waters. During these periods Mr. D. G. Lillie, one of the biologists of the expedition who has been attached throughout to the *Terra Nova,* has been endeavouring to clear up on the evidence of the fossil floras some of the many points which remain unsolved with regard to the stratigraphical geology of New Zealand. In particular, he has made large collections from the Mount Potts Beds, in Ashburton County, Canterbury. Whether these beds contain Glossopteris, as asserted by Hector and others, has long been a matter of dispute, for the whole question whether New Zealand formed part of the great southern Permo-Carboniferous continent of "Gondwanaland" depends entirely on the character and age of the flora of these beds. As it proves, the flora of these beds is thoroughly Mesozoic. The flora as a whole consists chiefly of Rhætic plants, though a few Jurassic types also occur, and thus the age of the beds is either Rhætic or Lower Jurassic. The Mount Potts beds are admittedly the oldest plant-bearing series, in a geological sense, as yet discovered in New Zealand. No Palæozoic plants are known from these islands, and there is thus no evidence that they formed part of "Gondwanaland" in Permo-Carboniferous times.—Sir D. **Bruce,** Majors D. **Harvey** and A. E. **Hamerton,** Dr. J. B. **Davey,** and Lady **Bruce**: (1) Trypanosomes found in the blood of wild animals living in the sleeping sickness area, Nyasaland. (2) Trypanosome diseases of domestic animals in Nyasaland. II., *Trypanosoma Caprae* (Kleine). (3) Morphology of various strains of the trypanosome causing disease in man in Nyasaland. I., The human strain.

Linnean Society, February 20.—Prof. E. B. Poulton, F.R.S. president, in the chair.—Roland H. **Deakin**: Anatomy of the larva of *Phryganea stricta.*—W. Botting **Hemsley**: The genera Radamæa, Benth., and Nesogenes, A. DC. *Radamaea montana* is a shrub from Madagascar, and some imperfect specimens of a similar plant were referred to his *R. prostrata.* On comparing these specimens with some collected on the *Sealark* expedition by Prof. J. Stanley Gardiner and Mr. J. C. F. Fryer, the author found it had to be transferred to its proper genus, Nesogenes. Four species of the latter genus are now known, including a new one from Aldabra, named *N. Dupontii,* Hemsl., after the discoverer.—Prof. R. J. Harvey **Gibson** and Margaret **Knight**: Marine Algæ collected by Mr. Cyril Crossland in the Red Sea. Part ii. was mainly a list of species, forty-six in number, thirty-five of which are additions to the former list. The authors have observed sexual and asexual organs, not merely on the same plant, but on the same branch, in several species, and consider the phenomenon to be by no means exceptional.

BOOKS RECEIVED.

Problems of Life and Reproduction. By Prof. M. Hartog. Pp. xx+362. (London: J. Murray.) 7*s.* 6*d.* net.

Geschichte der deutschen Naturphilosophie. By Dr. C. Siegel. Pp. xv+390. (Leipzig: Akademische Verlagsgesellschaft m.b.H.) 10 marks.

A Foundation Course in Chemistry for Students of Agriculture and Technology. By J. W. Dodgson and J. A. Murray. Pp. x+244. (London: Longmans and Co.) 3*s.* 6*d.* net.

An Introduction to Metaphysics. By Prof. H. Bergson. Authorised translation by T. E. Hulme. Pp. vi+79. (London: Macmillan and Co., Ltd.) 2*s.* net.

The Development of Mathematics in China and Japan. By Y. Mikami. Pp. x+347. (Leipzig: B. G. Teubner; London: Williams and Norgate.) 18 marks.

The Elements of Heating and Ventilation. By Prof. A. M. Greene, jun. Pp. vi+324. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd.) 10*s.* 6*d.* net.

Vertebrate Embryology. By Dr. J. W. Jenkinson. Pp. 267. (Oxford: Clarendon Press.) 12*s.* 6*d.* net.

Development and Purpose: an Essay towards a Philosophy of Evolution. By Prof. L. T. Hobhouse. Pp. xxix+383. (London: Macmillan and Co., Ltd.) 10*s.* net.

Aristarchus of Samos. The Ancient Copernicus. A History of Greek Astronomy to Aristarchus, together with Aristarchus's Treatise on the Sizes and Distances of the Sun and Moon. A New Greek Text, with Translation and Notes. By Sir T. Heath. Pp. viii+425. (Oxford: Clarendon Press.) 18*s.* net.

Materialien für eine wissenschaftliche Biographie von Gauss. By F. Klien and M. Brendel. Heft 2/3. Pp. 143. (Leipzig: B. G. Teubner.) 4.40 marks.

Report of the Thirteenth Meeting of the Australasian Association for the Advancement of Science, held at Sydney, 1911. Pp xciii+766+48 plates. (Sydney.)

Chloride of Lime in Sanitation. By A. H. Hooker. Pp. v+231. (New York: J. Wiley and Sons; London: Chapman and Hall, Ltd.)

The Trades School in the Transvaal. By W. J. Horne. Pp. viii+96. (Johannesburg: Argus Printing and Publishing Co., Ltd.)

Union of South Africa. Department of Agriculture. Report with Appendices for the period May

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31, 1910, to December 31, 1911. Pp. iv+663+plates. (Cape Town: *Cape Times,* Ltd.)

L.M.B.C. Memoirs of Typical British Marine Plants and Animals. xxi., Eupaguans. By Dr. G. Jackson. Pp. viii+79+vi plates. (London: Williams and Norgate.) 2*s.* 6*d.*

Philips's Panama Canal Route Globe. (London: G. Philip and Son, Ltd.) 2*s.* 6*d.* net.

The Economics of Everyday Life: a First Book of Economic Study. Part i. By T. H. Penson. Pp xiv+174. (Cambridge University Press.) 3*s.* net.

The Manufacture of Sulphuric Acid and Alkali with the Collateral Branches. By Prof. G. Lunge. Fourth edition. Vol. i., part i. Pp. xxiv+582. Part ii. Pp. xii+583–1078. Part iii. Pp. xii+1079–1617. (London: Gurney and Jackson.) 3*l.* 3*s.* net.

Verhandlungen des Naturhistorischen Vereins der preussischen Rheinlande und Westfalens. Neunundsechzigster Jahrgang, 1912. Erste Hälfte. Pp. lv+223+plates. (Bonn: F. Cohen.)

Technical School Organisation and Teaching. By C. Hamilton. Pp. xii+178. (London: G. Routledge and Sons, Ltd.) 2*s.* 6*d.* net.

Anleitung zur Kultur der Mikroorganismen. By Dr. E. Küster. Zweite Auflage. Pp. v+218. (Leipzig and Berlin: B. G. Teubner.) 8 marks.

The Organometallic Compounds of Zinc and Magnesium. By Dr. H. Wren. Pp. viii+100. (Chemical Monographs.) (London: Gurney and Jackson.) 1*s.* 6*d.* net.

La Télégraphie et la Téléphonie Simultanées et la Téléphonie Multiple. By K. Berger. Pp. 134. (Paris: Gauthier-Villars.) 4.50 francs.

Les Appareils D'Intégration. By H. de Morin. Pp. 208. (Paris: Gauthier-Villars.) 5 francs.

Aus Natur und Geisteswelt. Band 393, Die Dampfmaschine. By Prof. R. Vater. Dritte Auflage. Pp. vi+104. (Leipzig and Berlin: B. G. Teubner.) 1.25 marks.

First-Year Course in General Science. By E. A. Gardiner. Pp. vi+113. (London: W Heinemann.) 2*s.* 6*d.* net.

DIARY OF SOCIETIES.

THURSDAY, March 13.

Royal Society, at 4.30.—A Simple Method of Finding the Approximate Period of Stable Systems: A. Mallock.—The Motion of Electrons in Gases: Prof. J. S. Townsend and H. T. Tizard.—The Self Inductance of Circular Coils of Rectangular Section: Prof. T. R. Lyle.—Ammonium Ferrous Sulphate and its Alkali-Metal Isomorphs: Dr. A. E. H. Tutton.—The Recombination of the Ions produced by Röntgen Rays in Gases and Vapours: H. Thirkill.—Optical Investigation of Solidified Gases. III. The Crystal-properties of Chlorine and Bromide: Dr. W. Wahl.

Royal Institution, at 3.—Surface Energy: W. B. Hardy.

Institution of Electrical Engineers, at 8.—Power Supply on the Rand: A. E. Hadley.

Concrete Institute, at 7.30.—The Strength of Cement: H. C. Johnson.

Institution of Mining and Metallurgy, at 8.—Annual General Meeting.

Mathematical Society, at 8.—Some Cases of Tidal Motion of Rotating Sheets of Water: J. Proudman.—Indeterminate Equations of the Third and Fourth Degree: L. J. Mordell.

Society of Dyers and Colourists, at 8.—Stripping Agents for Garment Dyers: F. G. Newbury.—A Few Notes on Fur Dyeing: M. C. Lamb.

FRIDAY, March 14.

Royal Institution, at 9.—Great Advance in Crystallography: Dr. A. E. H. Tutton.

Institution of Mechanical Engineers, at 8.—Some Effects of Super heating and Feed-water Heating on Locomotive Working: F. H. Trevithick and P. J. Cowan.

Physical Society (University College, Gower Street), at 5.—Demonstration of Spark Photographs: W. B. Haines.—(1) Some Oscillograms of Condenser Discharges and a Simple Theory of Coupled Circuits; (2) Exhibition of Braun Kathode-Ray Tubes and an Electrostatic Machine for Working them, used as a High-frequency Oscillograph: Prof. J. A. Fleming.—The Stretching and Breaking of Sodium and Potassium: B. B. Baker.—The Latent Heat of Evaporation of Aqueous Salt Solutions: R. G. Lunnor.—Some Flame Spectra: Dr. E. N. da C. Andrade.

Royal Astronomical Society, at 5.—The Sounds Alleged to Accompany Flights of Meteors: A. King.—Note on the Possibility of Refraction by the Sun's Atmosphere. Papers of the I.U.S.R. No. VIII.: R. S. Capon.—Observations of Gale's Comet: Sydney Observatory.—A Family of Oscillating Orbits of Short Period; H. R. Willard.—Note on the Nebula H I Cassiopeiæ: Mrs. Isaac Roberts.—Notes on Fireballs and Shooting Stars: W. F. Denning.—The Variable Star R Cygni: E. E. Barnard.—A Formula for Correcting Statistics for the Effects of a Known Probable Error of Observation: A. S. Eddington.—*Probable Papers:* Observations made with the Durham Almucantar during 1912: E. H. Hills and F. C. H. Carpenter.—Enhanced Lines in the Early Spectrum of Nova Geminorum No. 2: H. F. Newall and F. J. M. Stratton.—The Distribution in Space of the Stars of Carrington's Circumpolar Catalogue: F. W. Dyson.—The Distribution in Space of the Bright Stars: A. S. Eddington.—Report on the Expedition to Passu Quatro, Brazil, to observe the Total Solar Eclipse of 1912 (October 10): A. S. Eddington and C. Davidson.

SATURDAY, March 15.

Royal Institution, at 3.—The Properties and Constitution of the Atom: Sir J. J. Thomson, O.M.

MONDAY, March 17.

Victoria Institute, at 4.30.—The Bearing of Archæological and Historical Research on the New Testament: Rev. Parke P. Flournoy.

TUESDAY, March 18.

Royal Statistical Society, at 5.—Some Statistical Problems suggested by the Sickness and Mortality Data of Certain of the Large Friendly Societies: Dr. E. C. Snow.

Zoological Society, at 8.30.—Remarks on the Relationship of the Big Game of Africa to the Spreading of Sleeping Sickness: Dr. W. Yorke.—Variations in the Skeleton of the Pectoral Fins of Polypterus: Edith E. Bamford.—A Descriptive Study of an Oligochæte Worm of the Family Enchytræidæ: H. H. Stirrup.—(1) A Collection of Fishes made by Prof. Francisco Fuentes at Easter Island; (2) A Revision of the Fishes of the Genus Kuhlia: C. Tate Regan.—The Polyzoa of Waterworks: Dr. S. F. Harmer.

Institution of Civil Engineers, at 8.—*Further Discussion:* Notes on City Passenger-Transportation in the United States: G. D. Snyder.

WEDNESDAY, March 19.

Entomological Society, at 8.—The Classification of the British Crabronidæ (Hymenoptera): Dr. R. C. L. Perkins.

Geological Society, at 8.—The Geology of Northern Peru: Tertiary and Quaternary Birds: Beeby Thompson.—The Internal Cranial Elements and Foramina of *Dapedius Granulatus:* G. Allan Frost.

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Editorial and Publishing Offices:
MACMILLAN & CO., Ltd.,
ST. MARTIN'S STREET, LONDON, W.C.

Advertisements and business letters to be addressed to the Publishers.

Editorial Communications to the Editor.
Telegraphic Address: Phusis, London.
Telephone Number: Gerrard 8830.

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